

**WHAT IS CLAIMED IS:**

1           1. A tension mask frame assembly for a color cathode ray tube, comprising:  
2           a tension mask formed on a plate, the tension mask including a plurality of strips and  
3 including a plurality of slots to separate by a predetermined distance corresponding adjacent ones  
4 of the plurality of strips;

5           a plurality of real bridges for respectively partitioning corresponding slots of the plurality  
6 of slots at a predetermined pitch interval by connecting adjacent ones of the plurality of strips;  
7 and

8           a frame for supporting the tension mask, whereby a vertical pitch of the plurality of real  
9 bridges in a center portion of the tension mask is greater than a vertical pitch of the plurality of  
10 real bridges in a peripheral portion of the tension mask.

11           2. The tension mask frame assembly for a color cathode ray tube according to claim 1,  
12 further comprising:

13           a plurality of dummy bridges, each dummy bridge extending from a strip of the plurality  
14 of strips on at least one side of a corresponding slot of the plurality of slots in a direction towards  
15 a strip of the plurality of strips on an opposite side of the corresponding slot and being formed  
16 adjacent to the corresponding slot that is partitioned by a corresponding one of the plurality of  
17 real bridges.

1           3. The tension mask frame assembly for a color cathode ray tube according to claim 2,  
2 further comprised of corresponding dummy bridges of the plurality of dummy bridges adjacent to  
3 a corresponding slot of the plurality of slots being in a staggered relation with respect to  
4 corresponding dummy bridges of the plurality of dummy bridges adjacent to an opposing slot of  
5 the plurality of slots.

1           4. The tension mask frame assembly for a color cathode ray tube according to claim 2,  
further comprised of a portion of the tension mask to one side of a center of the tension mask  
being symmetrical to a corresponding portion of the tension mask located to an opposing side of  
the center of the tension mask.

5           5. The tension mask frame assembly for a cathode ray tube according to claim 2, further  
comprised of opposing side portions of the tension mask located with respect to a center of the  
tension mask being symmetrical.

1           6. The tension mask frame assembly for a color cathode ray tube according to claim 2,  
2 further comprised of each dummy bridge including a pair of protrusions, each pair of protrusions  
3 respectively extending from adjacent strips of the plurality of strips, whereby a corresponding  
4 pair of protrusions forming a dummy bridge are disposed in facing relation to each other.

1           7. A tension mask frame assembly for a color cathode ray tube, comprising:

2 a tension mask formed on a plate, the tension mask including a plurality of strips and  
3 including a plurality of slots to separate by a predetermined distance corresponding adjacent ones  
4 of the plurality of strips;

5 a plurality of real bridges for respectively partitioning corresponding slots of the plurality  
6 of slots at a predetermined pitch interval by connecting adjacent ones of the plurality of strips;  
7 and

8 a frame for supporting the tension mask, whereby a vertical pitch of the plurality of real  
bridges decreases in a stepwise relation in a direction from a center portion of the tension mask to  
a peripheral portion of the tension mask.

4 8. The tension mask frame assembly for a color cathode ray tube according to claim 7,  
further comprising a plurality of dummy bridges on the plate, each dummy bridge extending from  
a strip of the plurality of strips on at least one side of a corresponding slot of the plurality of slots  
in a direction towards a strip of the plurality of strips on an opposite side of the corresponding  
5 slot and being formed adjacent to the corresponding slot that is partitioned by a corresponding  
6 one of the plurality of real bridges.

1 9. The tension mask frame assembly for a color cathode ray tube according to claim 8,  
2 further comprised of corresponding dummy bridges of the plurality of dummy bridges adjacent to  
3 a corresponding slot of the plurality of slots being in a staggered relation with respect to  
4 corresponding dummy bridges of the plurality of dummy bridges adjacent to an opposing slot of

5 the plurality of slots.

1 10. The tension mask frame assembly for a color cathode ray tube according to claim 8,  
2 further comprised of a portion of the tension mask located to one side with respect to a center of  
3 the tension mask being symmetrical to a corresponding portion of the tension mask located to an  
4 opposing side with respect to the center of the tension mask.

11. The tension mask frame assembly for a color cathode ray tube according to claim 8,  
further comprised of opposing side portions of the tension mask located with respect to a center  
of the tension mask being symmetrical.

12. The tension mask frame assembly for a color cathode ray tube according to claim 8,  
further comprised of each dummy bridge including a pair of protrusions, each pair of protrusions  
respectively extending from adjacent strips of the plurality of strips, whereby a corresponding  
pair of protrusions forming a dummy bridge are disposed in facing relation to each other.

1 13. The tension mask frame assembly for a color cathode ray tube according to claim 8,  
2 further comprised of a value M being obtained by dividing a vertical pitch of corresponding ones  
3 of the plurality of real bridges of the tension mask by a vertical pitch of corresponding ones of  
4 the plurality of dummy bridges of the tension mask, the value M decreasing in a stepwise relation  
5 in a direction from the center portion of the tension mask to the peripheral portion of the tension

6 mask.

1 14. The tension mask frame assembly for a color cathode ray tube according to claim 13,  
2 further comprised of the value M being in the range of from  $3 \leq M \leq 29$ .

1 15. The tension mask frame assembly for a color cathode ray tube according to claim 13,  
2 further comprised of the value M being an integer.

3 16. The tension mask frame assembly for a color cathode ray tube according to claim 13,  
4 further comprised of the tension mask including a plurality of regions, with a region of the  
5 plurality of regions having a value M obtained by dividing a vertical pitch of corresponding ones  
6 of real bridges in the region by a vertical pitch of corresponding ones of the dummy bridges in  
7 the region and having an adjacent region to the region of the plurality of regions having a value  
8  $M-n$  obtained by dividing a vertical pitch of corresponding ones of real bridges in the adjacent  
region by a vertical pitch of corresponding ones of dummy bridges in the adjacent region, with n  
being a value greater than zero and less than M.

1 17. The tension mask frame assembly for a color cathode ray tube according to claim 16,  
2 further comprised of the value M being in the range of from  $3 \leq M \leq 29$ .

1 18. The tension mask frame assembly for a color cathode ray tube according to claim 7,

2 further comprised of a portion of the tension mask located to one side with respect to a center of  
3 the tension mask being symmetrical to a corresponding portion of the tension mask located to an  
4 opposing side with respect to the center of the tension mask.

1 19. The tension mask frame assembly for a color cathode ray tube according to claim 7,  
2 further comprised of the stepwise relation being symmetrical for corresponding portions of the  
3 tension mask respectively located on opposing side portions with respect to a center of the  
4 tension mask.

20. The tension mask frame assembly for a color cathode ray tube according to claim 7,  
further comprised of corresponding opposing side portions of the tension mask located with  
respect to a center of the tension mask being symmetrical.

21. A tension mask frame assembly for a color cathode ray tube, comprising:

2 a tension mask including a plurality of strips for forming a plurality of slots isolated from  
3 each other on a plate at intervals of a predetermined distance;

4 a plurality of real bridges for respectively partitioning corresponding slots of the plurality  
5 of slots at a predetermined pitch interval by connecting adjacent ones of the plurality of strips;

6 a plurality of dummy bridges, each dummy bridge extending from a strip of the plurality  
7 of strips on at least one side of a corresponding slot of the plurality of slots in a direction towards  
8 a strip of the plurality of strips on an opposite side of the corresponding slot and being formed

9 adjacent to the corresponding slot that is defined by a corresponding one of the plurality of real  
10 bridges and corresponding adjacent ones of the plurality of strips; and

11 a frame for supporting the corresponding edges of the tension mask, the tension mask  
12 being partitioned into a plurality of regions in a direction from a center portion of the tension  
13 mask to a peripheral portion of the tension mask, whereby a vertical pitch of corresponding ones  
14 of the plurality of real bridges of the tension mask decreases in a stepwise relation in a direction  
15 from the center portion of the tension mask to the peripheral portion of the tension mask, with  
16 each decrease in the stepwise relation corresponding to a corresponding region of the plurality of  
17 regions.

22. The tension mask frame assembly for a color cathode ray tube according to claim 21,  
further comprised of each of the plurality of dummy bridges including a pair of protrusions, each  
pair of protrusions respectively extending from adjacent strips of the plurality of strips, whereby  
a corresponding pair of protrusions forming a dummy bridge are disposed in facing relation to  
each other.

23. The tension mask frame assembly for a color cathode ray tube according to claim 21,  
further comprised of a value M being obtained for a corresponding region of the plurality of  
regions of the tension mask by dividing a vertical pitch of real bridges in the corresponding  
region of the tension mask by a vertical pitch of dummy bridges in the corresponding region of  
the tension mask, the value M decreasing in a stepwise relation in a direction from the center

6 portion of the tension mask to the peripheral portion of the tension mask, with each decrease in  
7 the value of M in the stepwise relation corresponding to a corresponding region of the plurality of  
regions.

1 24. The tension mask frame assembly for a color cathode ray tube of claim 23, further  
2 comprised of the value M being in a range of  $3 \leq M \leq 29$ .

3 25. The tension mask frame assembly for a color cathode ray tube of claim 23, further  
4 comprised of M being an integer.

5 26. The tension mask frame assembly for a color cathode ray tube of claim 23, further  
6 comprised of a region of the plurality of regions of the tension mask having a value M obtained  
7 by dividing a vertical pitch of corresponding ones of real bridges in the region by a vertical pitch  
8 of corresponding ones of dummy bridges in the region and having an adjacent region to the  
region of the plurality of regions having a value M-n obtained by dividing a vertical pitch of  
corresponding ones of real bridges in the adjacent region by a vertical pitch of corresponding  
ones of dummy bridges in the adjacent region, with n being a value greater than zero and less  
than M.

1 27. The tension mask frame assembly for a color cathode ray tube of claim 26, further  
2 comprised of the value M being in a range of  $3 \leq M \leq 29$ .



1           28 The tension mask frame assembly for a color cathode ray tube according to claim 21,  
2 further comprised of a portion of the tension mask located to one side with respect to a center of  
3 the tension mask being symmetrical to a corresponding portion of the tension mask located to an  
4 opposing side with respect to the center of the tension mask.

1           29. The tension mask frame assembly for a color cathode ray tube according to claim 21,  
further comprised of the stepwise relation being symmetrical for corresponding portions of the  
tension mask respectively located on opposing side portions of the tension mask with respect to a  
center of the tension mask.

1           30. The tension mask frame assembly for a color cathode ray tube according to claim 21,  
further comprised of corresponding regions of the plurality of regions respectively located on  
opposing side portions of the tension mask with respect to a center of the tension mask being  
4 symmetrical.

1           31. The tension mask frame assembly for a color cathode ray tube according to claim 21,  
2 further comprised of the stepwise relation being symmetrical for corresponding regions of the  
3 plurality of regions respectively located on opposing side portions of the tension mask with  
4 respect to a center of the tension mask.

1           32. A tension mask for a color cathode ray tube, comprising:

2           a tension mask formed on a plate, the tension mask including a plurality of strips and  
3 including a plurality of slots to separate by a predetermined distance corresponding adjacent ones  
4 of the plurality of strips; and

5           a plurality of real bridges for respectively partitioning corresponding slots of the plurality  
6 of slots at a predetermined pitch interval by connecting adjacent ones of the plurality of strips,  
7 whereby a vertical pitch of the plurality of real bridges in a center portion of the tension mask is  
greater than a vertical pitch of the plurality of real bridges in a peripheral portion of the tension  
mask.

33. The tension mask for a color cathode ray tube according to claim 32, further  
comprising:

4           a plurality of dummy bridges, each dummy bridge extending from a strip of the plurality  
of strips on at least one side of a corresponding slot of the plurality of slots in a direction towards  
5 a strip of the plurality of strips on an opposite side of the corresponding slot and being formed  
6 adjacent to the corresponding slot that is partitioned by a corresponding one of the plurality of  
7 real bridges.

1           34. The tension mask for a color cathode ray tube according to claim 33, further  
2 comprised of corresponding dummy bridges of the plurality of dummy bridges adjacent to a  
3 corresponding slot of the plurality of slots being in a staggered relation with respect to

4 corresponding dummy bridges of the plurality of dummy bridges adjacent to an opposing slot of  
5 the plurality of slots.

1 35. The tension mask for a color cathode ray tube according to claim 33, further  
2 comprised of a portion of the tension mask to one side of a center of the tension mask being  
3 symmetrical to a corresponding portion of the tension mask located to an opposing side of the  
4 center of the tension mask.

36. The tension mask for a color cathode ray tube according to claim 33, further  
comprised of each dummy bridge including a pair of protrusions, each pair of protrusions  
respectively extending from adjacent strips of the plurality of strips, whereby a corresponding  
pair of protrusions forming a dummy bridge are disposed in facing relation to each other.

37. A tension mask for a color cathode ray tube, comprising:

2 a tension mask formed on a plate, the tension mask including a plurality of strips and  
3 including a plurality of slots to separate by a predetermined distance corresponding adjacent ones  
4 of the plurality of strips; and

5 a plurality of real bridges for respectively partitioning corresponding slots of the plurality  
6 of slots at a predetermined pitch interval by connecting adjacent ones of the plurality of strips,  
7 whereby a vertical pitch of the plurality of real bridges decreases in a stepwise relation in a  
8 direction from a center portion of the tension mask to a peripheral portion of the tension mask.

1           38. The tension mask for a color cathode ray tube according to claim 37, further  
2 comprising a plurality of dummy bridges on the plate, each dummy bridge extending from a strip  
3 of the plurality of strips on at least one side of a corresponding slot of the plurality of slots in a  
4 direction towards a strip of the plurality of strips on an opposite side of the corresponding slot  
5 and being formed adjacent to the corresponding slot that is partitioned by a corresponding one of  
6 the plurality of real bridges.

39. The tension mask for a color cathode ray tube according to claim 38, further  
comprised of a portion of the tension mask located to one side with respect to a center of the  
tension mask being symmetrical to a corresponding portion of the tension mask located to an  
opposing side with respect to the center of the tension mask.

40. The tension mask for a color cathode ray tube according to claim 38, further  
comprised of each dummy bridge including a pair of protrusions, each pair of protrusions  
respectively extending from adjacent strips of the plurality of strips, whereby a corresponding  
pair of protrusions forming a dummy bridge are disposed in facing relation to each other.

41. The tension mask for a color cathode ray tube according to claim 38, further  
comprised of a value M being obtained by dividing a vertical pitch of corresponding ones of the  
plurality of real bridges of the tension mask by a vertical pitch of corresponding ones of the

4 plurality of dummy bridges of the tension mask, the value M decreasing in a stepwise relation in  
5 a direction from the center portion of the tension mask to the peripheral portion of the tension  
6 mask.

1 42. The tension mask for a color cathode ray tube according to claim 41, further  
2 comprised of the value M being in the range of from  $3 \leq M \leq 29$ .

3 43. The tension mask for a color cathode ray tube according to claim 37, further  
4 comprised of a portion of the tension mask located to one side with respect to a center of the  
5 tension mask being symmetrical to a corresponding portion of the tension mask located to an  
6 opposing side with respect to the center of the tension mask.

1 44. The tension mask for a color cathode ray tube according to claim 37, further  
2 comprised of the stepwise relation being symmetrical for corresponding portions of the tension  
3 mask respectively located on opposing side portions with respect to a center of the tension mask.

1 45. A tension mask for a color cathode ray tube, comprising:

2 a tension mask including a plurality of strips for forming a plurality of slots isolated from  
3 each other on a plate at intervals of a predetermined distance;

4 a plurality of real bridges for respectively partitioning corresponding slots of the plurality  
5 of slots at a predetermined pitch interval by connecting adjacent ones of the plurality of strips;

and

a plurality of dummy bridges, each dummy bridge extending from a strip of the plurality of strips on at least one side of a corresponding slot of the plurality of slots in a direction towards a strip of the plurality of strips on an opposite side of the corresponding slot and being formed adjacent to the corresponding slot that is defined by a corresponding one of the plurality of real bridges and corresponding adjacent ones of the plurality of strips, the tension mask being partitioned into a plurality of regions in a direction from a center portion of the tension mask to a peripheral portion of the tension mask, whereby a vertical pitch of corresponding ones of the plurality of real bridges of the tension mask decreases in a stepwise relation in a direction from the center portion of the tension mask to the peripheral portion of the tension mask, with each decrease in the stepwise relation corresponding to a corresponding region of the plurality of regions.

46. The tension mask for a color cathode ray tube according to claim 45, further comprised of a value M being obtained for a corresponding region of the plurality of regions of the tension mask by dividing a vertical pitch of real bridges in the corresponding region of the tension mask by a vertical pitch of dummy bridges in the corresponding region of the tension mask, the value M decreasing in a stepwise relation in a direction from the center portion of the tension mask to the peripheral portion of the tension mask, with each decrease in the value of M in the stepwise relation corresponding to a corresponding region of the plurality of regions.

1           47. The tension mask for a color cathode ray tube of claim 46, further comprised of the  
2 value M being in a range of  $3 \leq M \leq 29$ .

1           48. The tension mask for a color cathode ray tube of claim 46, further comprised of a  
2 region of the plurality of regions of the tension mask having a value M obtained by dividing a  
3 vertical pitch of corresponding ones of real bridges in the region by a vertical pitch of  
4 corresponding ones of dummy bridges in the region and having an adjacent region to the region  
of the plurality of regions having a value  $M-n$  obtained by dividing a vertical pitch of  
corresponding ones of real bridges in the adjacent region by a vertical pitch of corresponding  
ones of dummy bridges in the adjacent region, with  $n$  being a value greater than zero and less  
than M.

1           49. The tension mask for a color cathode ray tube of claim 48, further comprised of the  
2 value M being in a range of  $3 \leq M \leq 29$ .

1           50. The tension mask for a color cathode ray tube according to claim 45, further  
2 comprised of a portion of the tension mask located to one side with respect to a center of the  
3 tension mask being symmetrical to a corresponding portion of the tension mask located to an  
4 opposing side with respect to the center of the tension mask.

1           51. The tension mask for a color cathode ray tube according to claim 45, further

2 comprised of the stepwise relation being symmetrical for corresponding portions of the tension  
3 mask respectively located on opposing side portions of the tension mask with respect to a center  
4 of the tension mask.

1 52. The tension mask for a color cathode ray tube according to claim 45, further  
2 comprised of corresponding regions of the plurality of regions respectively located on opposing  
3 side portions of the tension mask with respect to a center of the tension mask being symmetrical.